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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,755	10/22/2001	Young-Kwon Cho	678-757 (P9993)	7574
28249	7590	11/15/2006	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			FILE, ERIN M	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,755

Applicant(s)

CHO ET AL.

Examiner

Erin M. File

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/21/2006 have been fully considered but they are not persuasive.
2. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). For example, the applicant contends:

The simple feature of spreading pilot signals input to an I channel and a Q channel to different Walsh codes from each other, disclosed by Kim, is *completely different from the feature of transmitting predefined side information according to orthogonal codes that are multiplied for spreading, which is disclosed in the present invention.*

However, the examiner points out that the office action did not claim that Kim taught transmitting predefined side information. Similarly the applicant contends:

Kishi teaches a general spread of a CDMA communication method, which fails to teach or reasonably suggest a method of transmitting a spread pilot signal by a corresponding orthogonal code and transmitting the corresponding information bit by previously agreed information bits corresponding to orthogonal codes.

However, Where the examiner did not suggest a teaching that a method of transmitting a spread pilot signal by a corresponding orthogonal code and transmitting the corresponding information bit by previously agreed information bits corresponding to orthogonal code was supported by Kishi alone.

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3. Further, the applicant argument:

Johnston merely mentions side information and fails to teach or reasonably suggest an apparatus and method for transmitting side information on a burst pilot channel according to the present invention. The Examiner asserts that Johnston teaches the claimed side information because Johnston discloses a bit flag which specifies the coding mode of the band to transmit side information. Johnston plainly describes in col. 21, lines 3-6 how "a one bit flag is associated with each band that specifies the coding mode of that band." The bit flag suggested by Johnston specifies the coding mode and does not designate or determine the respective phase or complex channel of the output signal.

The examiner is confused by this analysis, as lines 3-6 of column 21 in Patent No.

5,481,614 of Johnson state: "Associated with each band is a one bit flag that specifies the coding mode of that band and must be transmitted to the decoder as side information. From now on it is called a coding mode flag." The bit flag does specify the coding mode, however, Johnston discloses that the coding mode is chosen based upon the channel characteristics (col. 20, line 51-col. 21, line 2), therefore the coding flag is indicative of channel information.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-4 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 5,960,029), Kishi (U.S. Patent No. 6,888,813), and Johnston (U.S. Patent No. 5,481,614).

Claims 1, 10, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim. Further, although neither Kim nor Kishi disclose the burst pilot channel transmits side information being dependent on the transmission data according to at least one of the phase, and the complex channel and the orthogonal code, Johnston discloses a bit flag which specifies the coding mode (indicative of channel information) of the band to transmit side information (col. 21, lines 3-6). Because Johnston discloses that this method of coding has the advantage in being adaptive in time (col. 21, lines 3-6), it would have been obvious to one skilled in the art at the time of invention to incorporate the side information transmission method of Johnston into the combined inventions of Kim and Kishi.

Claims 2, 11, Neither Kim, Kishi, nor Johnston disclose the modulated pilot symbol has a length of 128 chips, however, at the time of invention, it would have been obvious to a

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person of ordinary skill in the art to adjust pilot length of 128 chips. Applicant has not disclosed using this particular code length provides an advantage, is used for a particular purpose, or solves a stated problem. Further, the specification discloses that the burst pilot channel can vary from 64 to as many as 1,024 chips. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with pilot bursts of varying sizes. Therefore, it would have been obvious to one of ordinary skill in this art to modify Na to obtain the invention as specified in Claim 2.

Claims 3, 12, Neither Kim, Kishi, nor Johnston disclose the modulated pilot symbol has a length of 64 chips. However, it would be obvious to one skilled in the art to use a modulated pilot symbol of a length of 64 chips as is described in Claim 2 above.

Claims 4, 13, Kim further discloses a complex channel including an I channel and a Q channel (fig. 1).

6. Claims 5, 7, 8, 14, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 5,960,029) and Kishi (U.S. Patent No. 6,888,813).

Claims 5, 14, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi

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discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim.

Claims 7, 8, 16, 17, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim further discloses an indexed orthogonal spreading code is used to spread the signals (fig. 1, 15), indicating that this code is one of a plurality of codes. Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim.

7. Claims 6, 9, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 5,960,029); Kishi (U.S. Patent No. 6,888,813), and Bottomley (U.S. Patent No. 6,515,980).

Claims 6, 15, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi

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discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim.

Although neither Kim nor Kishi disclose the modulated pilot output on a designated complex channel according to an information bit for determining the complex channel, however, Bottomley discloses a received baseband signal which is defined in terms of a complex channel coefficient (col. 8, eq. 1, lines 48-51). Because the designation of a complex channel allows for reduced channel interference (col. 8, lines 37-40), it would have been obvious to one skilled in the art at the time of invention to incorporate the complex channel designation as disclosed by Bottomley into the combined invention of Kim and Kishi.

Claim 9, 18, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim further discloses an indexed orthogonal spreading code is used to spread the signals (fig. 1, 15), indicating that this code is one of a plurality of codes. Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim.

Although neither Kim nor Kishi disclose the modulated pilot output on a designated

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complex channel according to an information bit for determining the complex channel, however, Bottomley discloses a received baseband signal which is defined in terms of a complex channel coefficient (col. 8, eq. 1, lines 48-51). Because the designation of a complex channel allows for reduced channel interference (col. 8, lines 37-40), it would have been obvious to one skilled in the art at the time of invention to incorporate the complex channel designation as disclosed by Bottomley into the combined invention of Kim and Kishi.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040.

The examiner can normally be reached on M-F from 1:00PM-9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin M. File

EMF

11/11/2006


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER